NEWS from ARO-FE (April 2002): Nano Technology 2002

http://www.arofe.army.mil/AROindex.htm (dandreag@arofe.army.mil)

Dr. Tomoji Kawai, Chairman nano tech executive committee: "…the objective being to promote commercial use of this fascinating discipline and aim particularly to venture firms with the technological capacity to enjoy lucrative business opportunities….

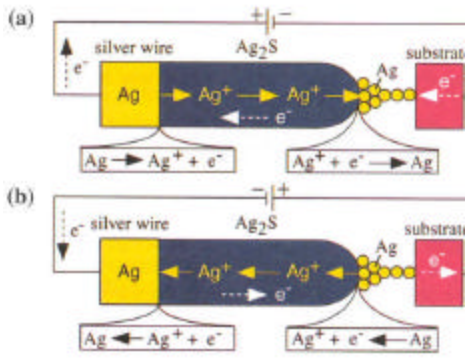


Figure 1 / http://www.riken.go.jp/

Fig 1. Example of a nano device: - The formation & annihilation of a quantum point contact (QPC) is controlled by a solid electrochemical reaction. A silver nanotip grows on a silver sulfide (Ag_2S) electrode to build an atomic bridge to a Pt electrode at a distance of 1nm. Since the growth & shrinkage of the silver nanotip are controlled simply by applying a certain bias between the two electrodes controls, it can be used as a switching device.

NANOTECHNOLOGY

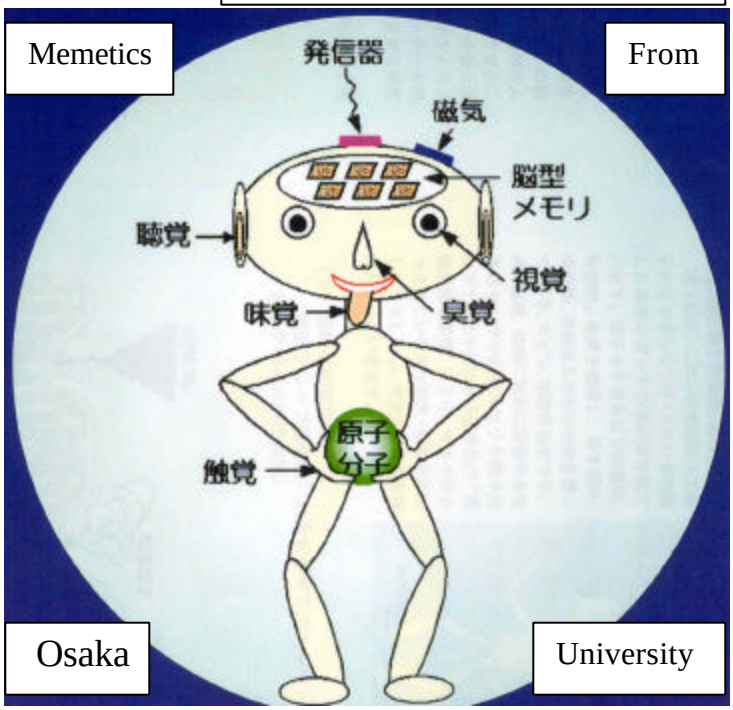
Nanotechnology, the leading edge of modern science and technology, was born in the early 80's with the invention of the scanning probe microscopy by Drs Binning and Rohrer of IBM Zurich. It opened up a completely new window into the 10^{-9}, nanoscale world, and remains a challenging field in a wide variety of activities from solid-state physics to molecular biology.

Nano materials and nano processing technology make use of the special properties of substances by controlling their atoms and molecules at the nano level. Their applications are foreseen to reach beyond materials and devices to a wide range of areas, including optics, IT, electronics, medical care, biotechnology and the environment.

Dr. Tomoji Kawai says "advanced nations are lavishing efforts on R&D.. Japan is no exception, eminently since it allows us to make the most of manufacturing techniques in which our people excel. In short, nanotech is said to be a lifeline of Japan's cutting-edge technology.."

Nano 2002 Exhibition & Conference

On March 6-8, 2002 (at Makuhari Messe, Chiba, Japan), ARO-FE attended the first International Nanotechnology Exhibition & Conference featuring two keynote speeches, five sessions and 93 Exhibitors comprising of Universities, Research Institute and Companies. The guidebook and abstract of the symposium for Keynote Session P1 & P2, Materials Session F1 and Biotechnology Session F2 are available.



http://www.sanken.osaka-u.ac.jp/labs/kawai-lab/

ARO-FE has collected and is offering to you:

1. **The abstracts** of the symposium

2. **The websites of the 84 organizations** that participated at the exhibition. The websites are categorized in six tables covering: Materials; IT/MEMS & Hyperfine Processing; Bio/MEMS & Hyper Processing; Measurement & Evaluation; General; and Publications.

"Nano Tech 2002-Abstract.doc

"Nano Tech 2002-Exhib.doc"